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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,256	05/02/2001	Joshua Bers	00-4037	6908

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VERIZON CORPORATE SERVICES GROUP INC.
C/O CHRISTIAN R. ANDERSON
600 HIDDEN RIDGE DRIVE
MAILCODE HQEO3HO1
IRVING, TX 75038

EXAMINER

GAUTHIER, GERALD

ART UNIT PAPER NUMBER

2645

DATE MAILED: 10/07/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,256

Applicant(s)

JOSHUA BERS

Examiner

Gerald Gauthier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 1-3, 5-6, 8, 11 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (6,477,240) in view of Robinson et al. (6,141,411).

Regarding **claim 1**, Lim discloses a computer-implemented voice-based command structure for establishing outbound communication (column 1, lines 52-61), (which reads on claimed "an automated call routing system that routes a telephone call by responding to a routing objective of a calling party"), comprising:

a speech recognizer (126 on FIG. 1) that determines at least one phrase (column 9, line 7 "spoken words") from a speech utterance (column 9, line 7 "human voice") made by the calling party and outputs a digital phrase (column 9, lines 4-18) [The telephony server includes software to perform voice recognition and transcribe spoken words to digital data];

a topic identifier (126 on FIG. 1) that receives the digital phrase and converts the digital phrase to at least one of a word stem (column 9, line 28 "verbal commands") and a word class (column 9, line 28 "predefined dialing sequences") and generates a topic output (column 9, lines 19-37) [The telephony server includes an identifier that decide how to handle the digital data that includes voice-based commands that indicate the communication option settings].

Lim fails to disclose a maximum benefit router.

However, Robinson teaches a maximum benefit router that receives the topic output and determines where to route the telephone call in order to optimize at least one predetermined parameter the telephone call routed based on maximum benefit (column 11, lines 39-67).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the least cost router which analyses the digits to make the routing decisions of Robinson in the telephony server of Lim.

The modification of the invention will offer the capability of the least cost router which analyses the digits to make the routing decisions such as the system would reduce the time dialing a calling number for routing the call to the best carrier.

Regarding **claim 2**, Robison teaches wherein the maximum benefit router separates the routing objective of the calling party according to call topics (column 7, lines 7-26).

Regarding **claim 3**, Robinson teaches wherein the maximum benefit router separates the routing objective of the calling party from a second objective of a call center (column 7, lines 7-26).

Regarding **claim 5**, Robinson teaches a benefit matrix as input to the maximum benefit router, the benefit matrix having at least one routing destination and at least one caller topic (column 7, lines 38-54).

Regarding **claim 6**, Robinson teaches wherein the topic identifier generates a topic likelihood vector that is input to the maximum benefit router (column 7, lines 7-26).

Regarding **claim 8**, Robinson teaches wherein the maximum benefit router routes the telephone call to a first call center based upon optimized response quality (column 7, lines 7-26).

Regarding **claim 11**, Lim discloses wherein the speech recognizer is a spoken language-understanding device (column 2, lines 45-50).

Regarding **claim 14**, Lim discloses a computer-implemented voice-based command structure for establishing outbound communication (column 1, lines 52-61), (which reads on claimed “an automated call routing system that routes a telephone call by responding to a routing objective of a calling party”), comprising:

a recognizer (126 on FIG. 1) that determines at least one phrase (column 9, line 7 “spoken words”) made by the calling party and outputs a second phrase (column 9, lines 4-18) [The telephony server includes software to perform voice recognition and transcribe spoken words to digital data];

a topic identifier (126 on FIG. 1) that receives the second phrase and converts the second phrase to at least one of a word stem (column 9, line 28 “verbal commands”) and a word class (column 9, line 28 “predefined dialing sequences”) and generates a topic output (column 9, lines 19-37) [The telephony server includes an identifier that decide how to handle the digital data that includes voice-based commands that indicate the communication option settings].

Lim fails to disclose a maximum benefit router.

However, Robinson teaches a maximum benefit router that receives the topic output and determines where to route the telephone call in order to optimize at least one predetermined parameter the telephone call routed based on maximum benefit (column 11, lines 39-67).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the least cost router which analyses the digits to make the routing decisions of Robinson in the telephony server of Lim.

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The modification of the invention will offer the capability of the least cost router which analyses the digits to make the routing decisions such as the system would reduce the time dialing a calling number for routing the call to the best carrier.

4. **Claims 4, 7 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Robinson and in further view of Carpenter et al. (US 6,269,153).

Regarding **claim 4**, Carpenter teaches wherein the at least one predetermined parameter is selected from an $m \times n$ benefit matrix having m routing destinations and n caller topics (column 4, lines 37-53).

Regarding **claim 7**, Carpenter teaches wherein entries in the benefit matrix define the benefit in seconds of agent time saved by routing the call to a first destination based upon a first caller topic (column 2, lines 56-65).

Regarding **claim 15**, Carpenter teaches wherein the call can be one of a telephone call (column 3, lines 42-63).

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5. **Claims 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Robinson and in further view of Zhao (US 5,794,192).

Regarding **claim 9**, Zhao teaches wherein the maximum benefit router optimizes at least one predetermined parameter using Bayesian decision theory and determining minimum overall risk (column 5, lines 3-14).

Regarding **claim 10**, Robinson teaches wherein the minimum overall risk is the maximum benefit (column 8, lines 8-19).

6. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Parthasarathy et al. (US 6,233,555).

Regarding **claim 16**, Lim discloses a computer-implemented voice-based command structure for establishing outbound communication (column 1, lines 52-61), (which reads on claimed "a method for automatically routing a telephone call"), comprising the steps of:

receiving a telephone call (column 11, line 2 "the subscriber calls") from a caller (column 11, lines 1-13);

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determining phrases (column 9, line 7 "spoken words") from speech utterances by a caller (column 9, lines 4-18) [The telephony server includes software to perform voice recognition and transcribe spoken words to digital data];

inputting the determined phrases to a speech recognizer device (column 8, lines 55-65);

converting the recognized determined phrases into at least one of word stems (column 9, line 28 "verbal commands") and word classes (column 9, lines 19-37) [The telephony server includes an identifier that decide how to handle the digital data that includes voice-based commands that indicate the communication option settings];

performing keyword look up on the one of word stems and word classes (column 9, lines 19-37) [The telephony server includes an identifier that decide how to handle the digital data that includes voice-based commands that indicate the communication option settings];

Lim fails to disclose generating a feature vector, performing analysis, outputting a posterior possibilities vector, inputting the posterior possibilities vector and outputting a benefit sorted vector.

However, Parthasarathy teaches generating a feature vector that contains the number of times the at least one word stems and word classes were found in the determined phrase (column 5, lines 9-22);

performing analysis on the feature vector (column 5, lines 9-22);

outputting a posterior possibilities vector (column 6, lines 50-52);

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inputting the posterior possibilities vector (column 6, line 53 "posterior") and determining the expected call of a predetermined destination (column 6, lines 52-58); and

outputting a benefit sorted vector of destinations, benefits and topic scores (column 6, lines 3-12).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the threshold scoring unit assigns a speaker label to each feature vector of Parthasarathy and in the invention of Lim.

The modification of the invention will offer the capability of the threshold scoring unit assigns a speaker label to each feature vector such as the system would construct speaker models for the data in each class is modeled by Gaussian mixtures.

7. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Robinson and in further view of Cohen (US 6,295,533).

Regarding **claim 12**, Cohen teaches the topic identifier further comprising a stemming algorithm (column 15, lines 38-49).

Regarding **claim 13**, Cohen teaches wherein the stemming algorithm is Porter Stemming (column 15, lines 38-49).

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8. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Parthasarathy and in further view of McDonough et al. (US 5,625,748).

Regarding **claim 17**, McDonough teaches the analysis is performed on the feature vector using one of a multinomial model, a generalized linear model and a support vector machine (column 9, lines 22-52).

9. **Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Parthasarathy, in view of McDonough and in further view of Carpenter.

Regarding **claim 18**, Carpenter teaches the vector is a vector of scores for topics, each score representing confidence that the determined phrase is related to a predetermined topic and vector size is the number of topics (column 5, lines 39-63).

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10. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Parthasarathy and in further view of Carpenter.

Regarding **claim 20**, Carpenter teaches determining whether to route the call to a top-ranking destination or to reject the utterance if the topic score and/or benefit falls below a predetermined threshold (column 5, lines 50-63).

Response to Arguments

11. Applicant's arguments with respect to **claims 1-18 and 20** have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerald Gauthier whose telephone number is (703) 305-0981. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703) 305-4895. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.


g.g.
October 1, 2003

FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

